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ABSTRACT

This report describes the seven-stage innovative process invoked at Ben L. Smith High School, Greensboro, N. C. in effecting change in the physical education program. In depicting the structural components and operational characteristics associated with change from status quo to status quo over a three-year time period, the following circular stages are explained: (a) speculation, (b) goal identification, (c) commitment, (d) exploration, (e) evaluation, (f) verification, and (g) adoption. Staff interaction is considered to be the generating and sustaining force for innovation. Other experiences purported to be variables in the model-building exercise are also identified. Evidence of change is presented in terms of student involvement and the program's instructional features. (Author)

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A PROCESS-ORIENTED PARADIGM FOR INNOVATION IN SECONDARY PHYSICAL EDUCATION

Research Report
Presented at
The Annual Convention of
The American Alliance for Health, Physical Education and Recreation

Atlantic City, New Jersey
March 14, 1975

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by
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A PROCESS-ORIENTED PARADIGM FOR INNOVATION IN SECONDARY PHYSICAL EDUCATION*

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The University of North Carolina
at Greensboro

Introduction

The notion that change is inextricably bound up in the goals and processes of education is a little challenged proposition. Years ago, learning was simplistically described as bringing about a change in behavior. Then, an era of education followed during which schools purportedly attempted to prepare students to cope with a rapidly changing world. This was referred to as a time of education for change. Within the more recent past, educators in general have directed considerable attention to activities considered to be change-making. Educational researchers in particular have systematically studied change processes (Carlson, 1965; Clark and Guba, 1965; Hall, 1974; Havelock, 1974; Kohl, 1969; Maguire, 1970; Rogers, 1962; Rogers and Shoemaker, 1971). It is in the latter context, that of a research project, that the paradigm for innovation in secondary school physical education is set forth.

Although there is nothing new about relating ideas of change to many of the operations and effects of schools, there are several hazards associated with such an endeavor. For example, some individuals make fallacious assumptions about the appeal, applicability and relevance of particular innovations with regard to their own programs. People tend to forget that schools provide unique

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* Portions of this study were supported by (a) The American Alliance for Health, Physical Education and Recreation's National Association for Sport and Physical Education, (b) the Greensboro, North Carolina, Public Schools through its Director of Staff Development and (c) The Research Council of The University of North Carolina at Greensboro.

educational settings. Their locations, students, administrative and teaching personnel, facilities, curriculums, etc. all combine to create a very specific environment. Thus, that which may represent something new or changed in one situation may be "old hat" in another. In the second place, the representations of such ideas of change, whether they are presented in the forms of models, flow charts, formulas, etc. are too easily misinterpreted and over-generalized. Systematic induction and deduction as a research approach in the behavioral sciences is a highly complex and rigorous process. The naive consumer of such research may oversimplify, or as Kaplan (1964) puts it "undercomplicate" the product. Third, the tentativeness of many models is difficult if not impossible to discern. For purposes of this presentation, the word PARADIGM is intentionally used to depict the innovative process as transient and still-developing. Fourth, thoughtful analysis of the change-process can become so consuming that the goals and purposes of the effort become obscured. I cite these hazards to guard against misleading you.

So, in spite of the potential for semantic confusion and with full acknowledgment of that which cannot possibly be explained within the next hour, the following presentation describes the activities pursued over the past three years at what has come to be called The Center for Innovation in Secondary School Physical Education. The Center is a cooperative project of NASPE's Secondary School Physical Education Council, The Greensboro, North Carolina, Public Schools and The University of North Carolina at Greensboro's School of Health, Physical Education and Recreation. To reiterate a point made just above, this tripartite sponsorship is one of the Center's unique characteristics. The idea for the Center grew out of "a feasibility study." More specifically, the project was originally intended to investigate " . . . the possibility of establishing pilot experimental centers for innovative projects in individual schools (Love, 1971)."

Purpose

The purpose of the Center as specified in the Project Proposal was:

> . . . to specify, coordinate, evaluate and record the steps taken by the Greensboro, North Carolina, Public Schools and UNC-G in their combined effort to effect desirable changes in secondary school physical education experiences. The outgrowth of such changes shall be reflected in individual student behavior, in relations among staff which are critical to generating and effecting changes, and in the program of activities, per se. The long range goal of the project is the improvement of the quality of teaching and learning as it occurs in secondary school physical education. One of the more immediate "products" of the endeavor is the development of a set of guidelines appropriate for use elsewhere in the country by other persons desirous of undertaking similar experimentation. In other words, the project is intended to serve as a model that could be adapted to the needs, interests, and resources of other school systems (Berlin, 1972, p. 2).

What follows then is a report which seeks to answer the question, "How can the process of innovation be described? Subsequently, the report addresses the issue of the generalizability of the process.

Assumptions/Strategy

Model-building has been described as a creative and contemporary adventure of defining, applying and testing human behaviors (March in Stogdill, 1970, p. 139). On the basis of my experiences with this particular type of inquiry, I would add that it often involves more arbitrariness than other approaches to the study of behavior. Without apology and with the intent of clarifying that which is to follow, some of the arbitrary designations made relative to elements constituting the paradigm are herewith described. Inherent in these designations are numerous assumptions. Both the intended meanings and suppositions are important to understanding and interpreting the paradigm.

1. The innovative process as depicted at the CISSPE utilizes a theoretical frame of reference described by Cattell (1966) as a spiral. The spiral is formulated by such human processes as inducing, deducing, hypothesizing, observing and experimenting.

2. As presented, the paradigm is <u>not</u> hypothetical. It derives from selected inputs and some careful manipulations. The phenomena comprising the scheme are

real-world elements. Admittedly, some of the operational characteristics are abstractions. Compromising, for example, is an abstract idea. Nonetheless, it is asserted that the paradigm has achieved isomorphism; it does represent reality.

3. The data for the paradigm (the variables) are experiences and the observations of such experiences occurring as an integral part of the physical education program of Ben L. Smith High School. The paradigm makes no effort to be all-inclusive and identify all variables. Those that are specified are either (a) structural components of the Center or (b) operational characteristics of the program (Stogdill, 1970, p. 12). Relationships among the variables are indicated with regard to direction and focus.

4. The upward left-to-right spiraling effect is intended to convey ascending and cumulative consequences. Although the paradigm acknowledges the status quo at both the onset and completion of innovation, obviously different existing conditions are represented. Fundamental to the dynamic facet of the plan is staff interaction; these relationships initiate and maintain the forces of motion throughout the entire process.

5. The geometric form used in the paradigm is the circle. It gives credence to the paradigm because: (a) the circle has no clear beginning and/or ending—successive circles end where they begin; (b) various natural phenomena occur cyclically and we are quite "comfortable" with circular human functioning; (c) circles connote wholeness and unity; (d) two forces, centrifugal and centripetal—from within and without—are associated with circles; and (e) in a logical argument, conclusions and premises may be set forth in a "vicious circle." There is a logical dimension to model formulation. I shall have an added comment to make at the end of the presentation relative to the appropriateness of the circle as the major form of the paradigm.

6. Finally, the paradigm seeks to prove nothing. It makes no claims of causality. It merely describes.

Organization of the Remainder of the Paper

The innovative process that has taken place in Ben L. Smith High School's physical education program is described in a series of diagrams. As an orientation for the reader/listener, a review is first presented of the theory undergirding the paradigm—Cattell's inductive-hypothetico-deductive spiral. The adaptation (modification) of this frame of reference to the functioning of the Center and the force generating and sustaining the dynamic aspects of the paradigm are next illustrated. Thus, the relationships among Center staff, the initiating, organizing, integrating and binding agents of the entire model, are incorporated.

Two overviews of the paradigm, one revealing three broad categories of the innovative process and the second depicting more specific stages are then presented. Details of both structural components and operational characteristics are revealed in this series of figures.

Evidences of innovation are discussed and to the extent that words permit, a synthesis is then offered. Some of the less discernible elements of the process are pointed out. Finally, the notion of feasibility is addressed. It is fully intended that audience questions at the conclusion of the formal presentation will further amplify the topic under discussion.

The Paradigm

Frame of reference and its adaptation of the CISSPE.

- #1. The inductive-hypothetico-deductive spiral
- #2. Adaptation of Cattell's spiral to curricular innovation

The forces compelling and inhibiting innovation.

- #3. Staff interactions: the generating and sustaining force for innovation
- #4. Counterforces to innovation

Overview of innovation.

- #5. Three broad stages
- #6. Seven-stage process-oriented paradigm

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THE INDUCTIVE - HYPOTHETICO - DEDUCTIVE SPIRAL*

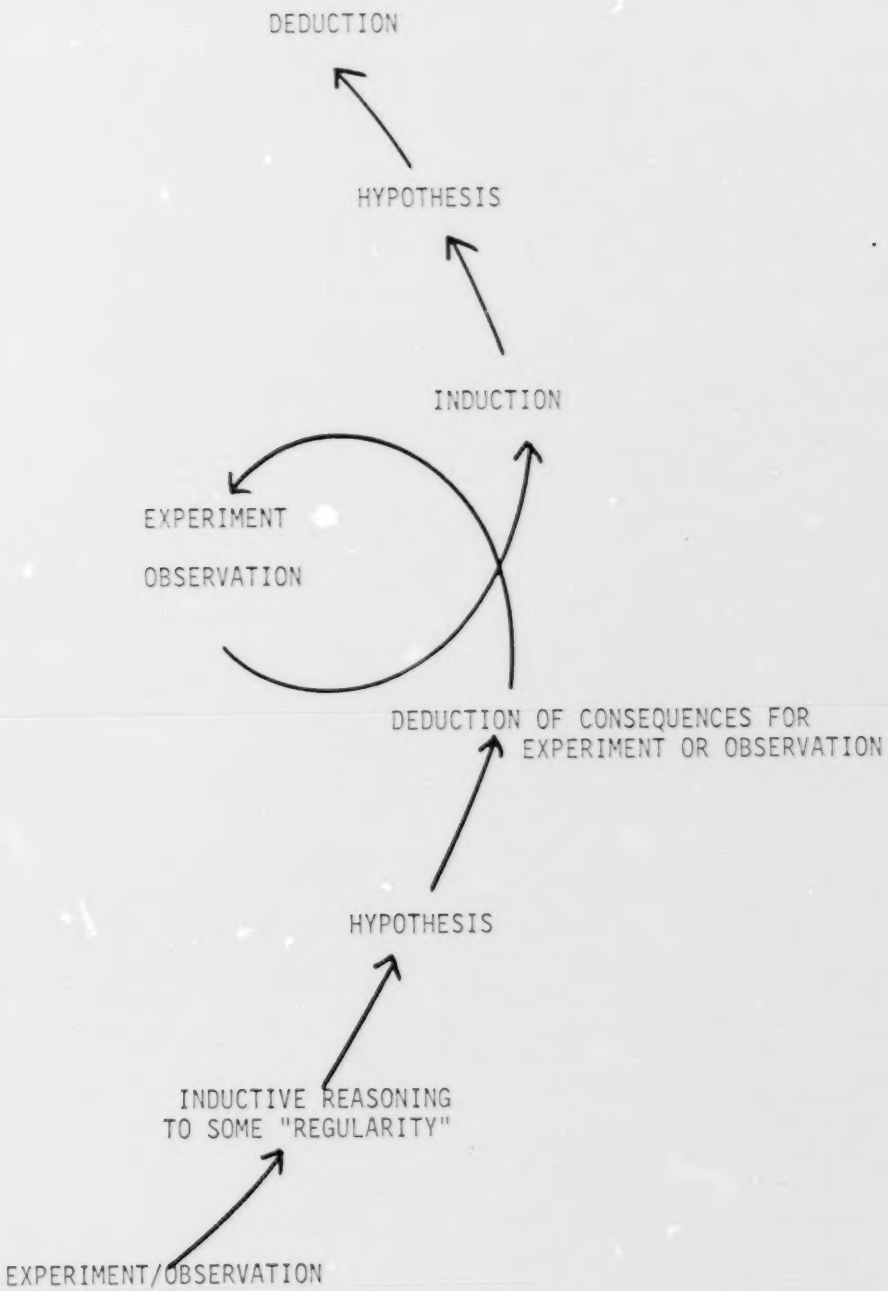

Figure 1

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* Cattell, R. B. (Ed.) Handbook of multivariate experimental psychology. Chicago: Rand McNally, 1966, p. 16.

ADAPTATION OF CATTELL'S I-H-D SPIRAL TO CURRICULAR INNOVATION

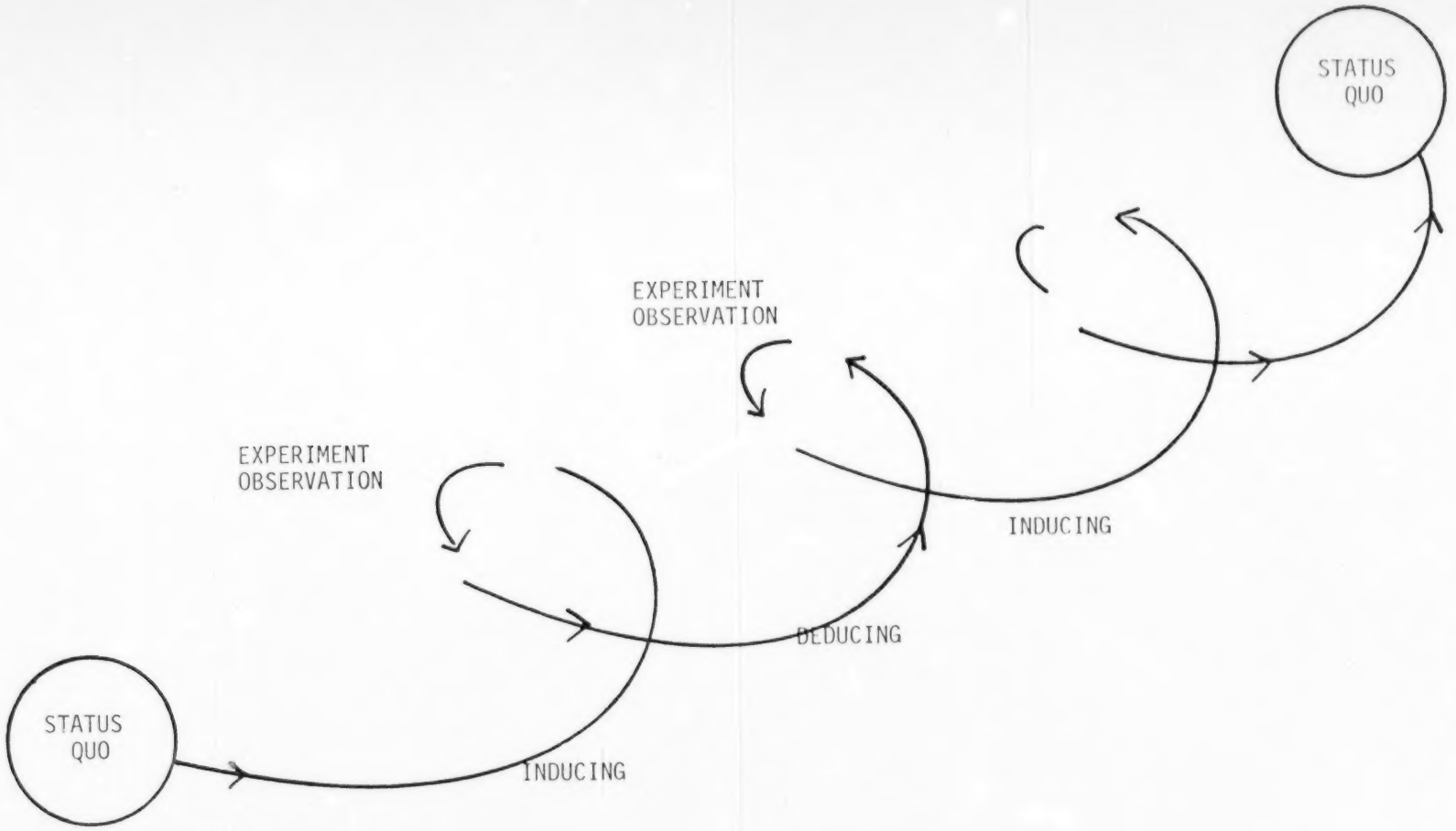

Figure 2

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THE GENERATING AND SUSTAINING FORCE FOR INNOVATION:

STAFF INTERACTIONS

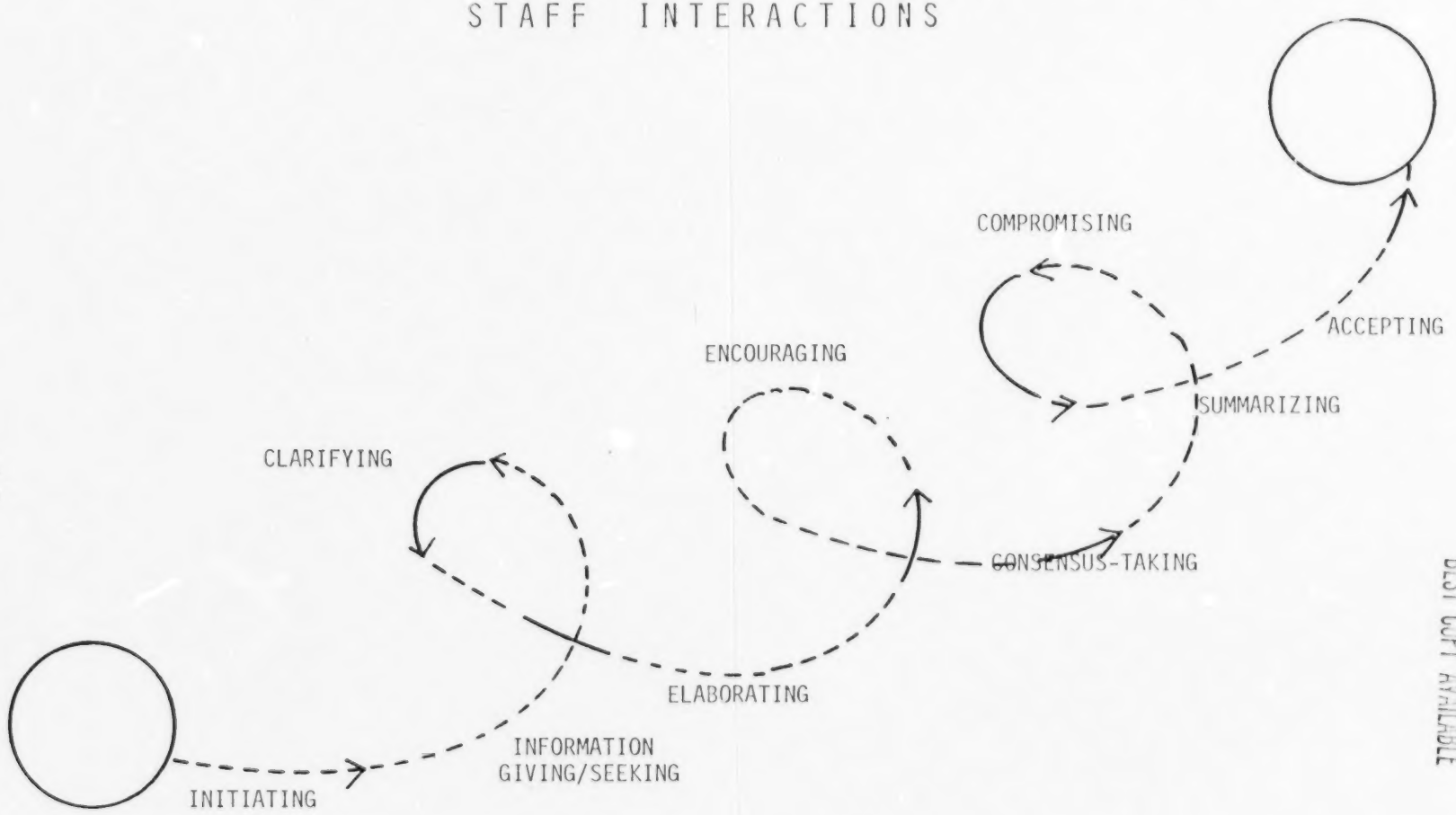

Figure 3

Behaviors described by Smith Richardson Foundation

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COUNTERFORCES TO INNOVATION

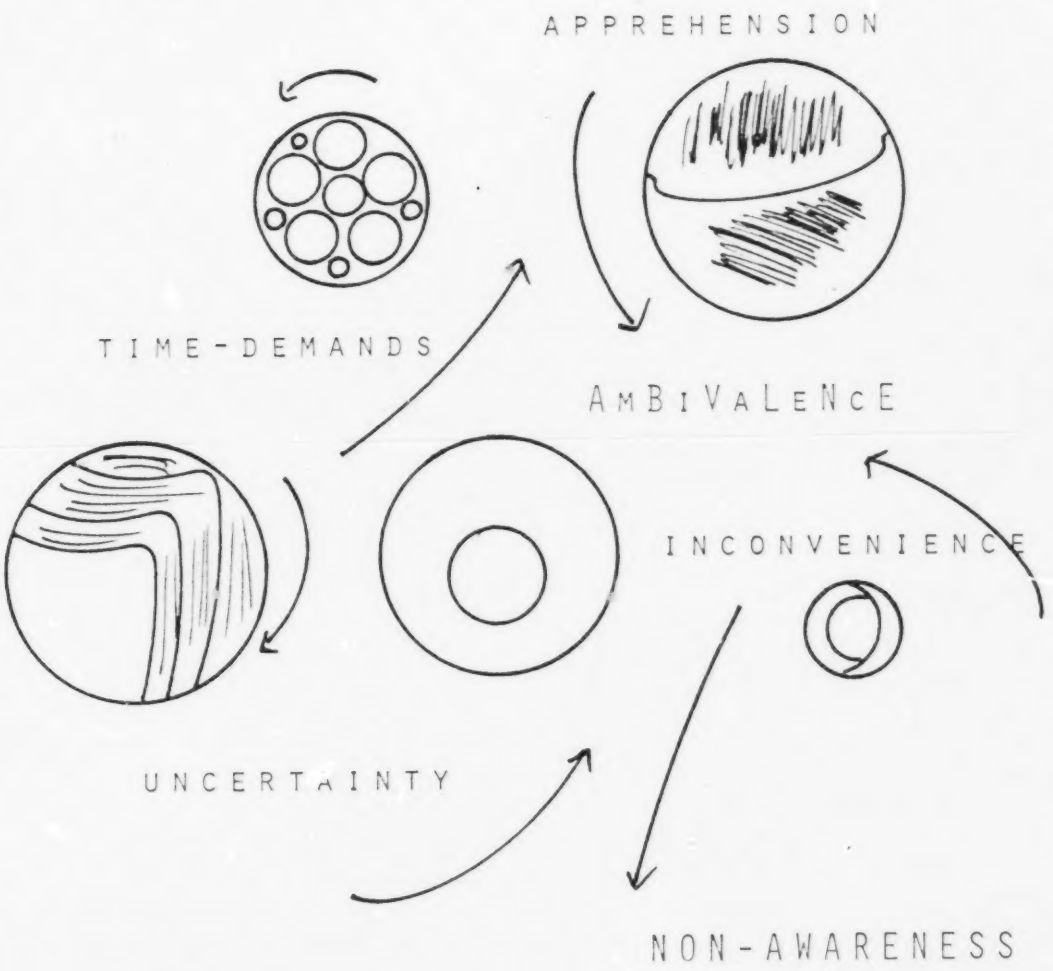

Figure 4

THREE STAGES OF INNOVATION

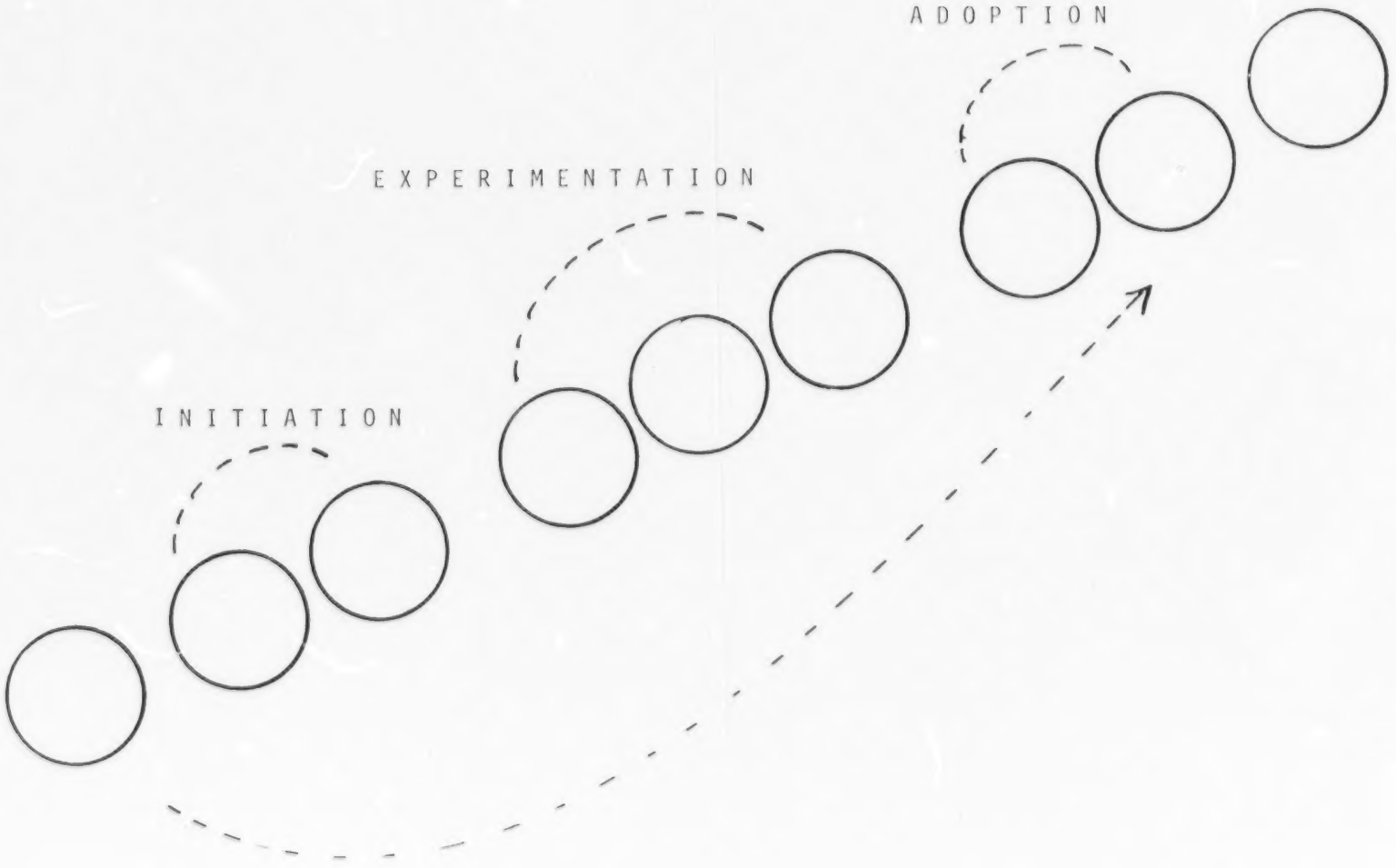

Figure 5

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PROCESS - ORIENTED PARADIGM FOR CURRICULAR INNOVATION

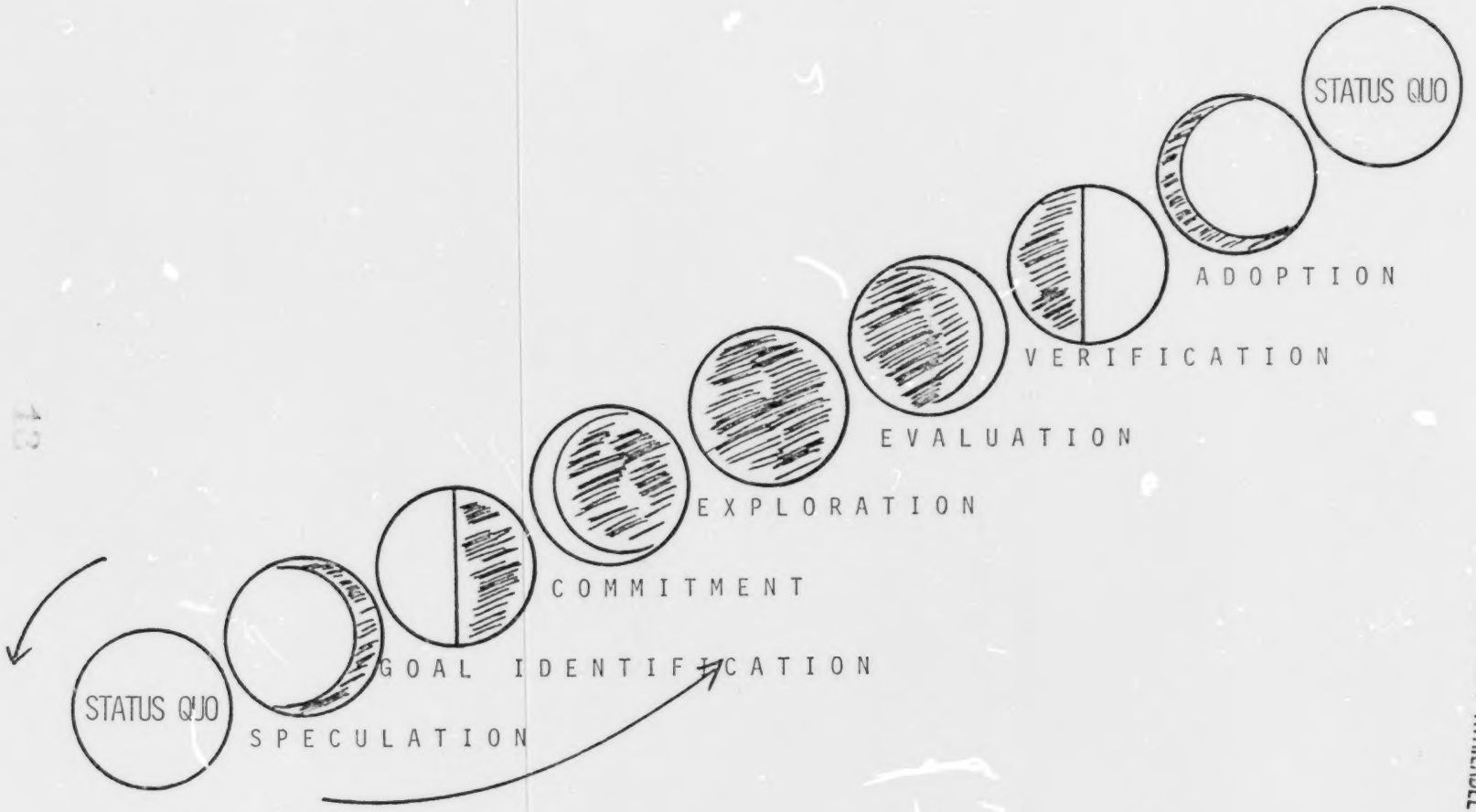

Figure 6

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Structual components.

#7. The innovative environment: inputs

#8. Inputs: the Greensboro Public Schools

#9. Inputs: The University of North Carolina at Greensboro

#10. Inputs: AAHPER and the community

The innovative process; operational characteristics.

#11. From status quo to speculation

#12. From speculation to goal identification

#13. From goal identification to commitment

#14. From commitment to exploration

#15. From exploration to evaluation

#16. From evaluation to verification

#17. From verification to adoption

#18. From adoption to status quo

(commentary)

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THE INNOVATIVE ENVIRONMENT

CENTER FOR INNOVATION IN SECONDARY SCHOOL PHYSICAL EDUCATION

INPUTS

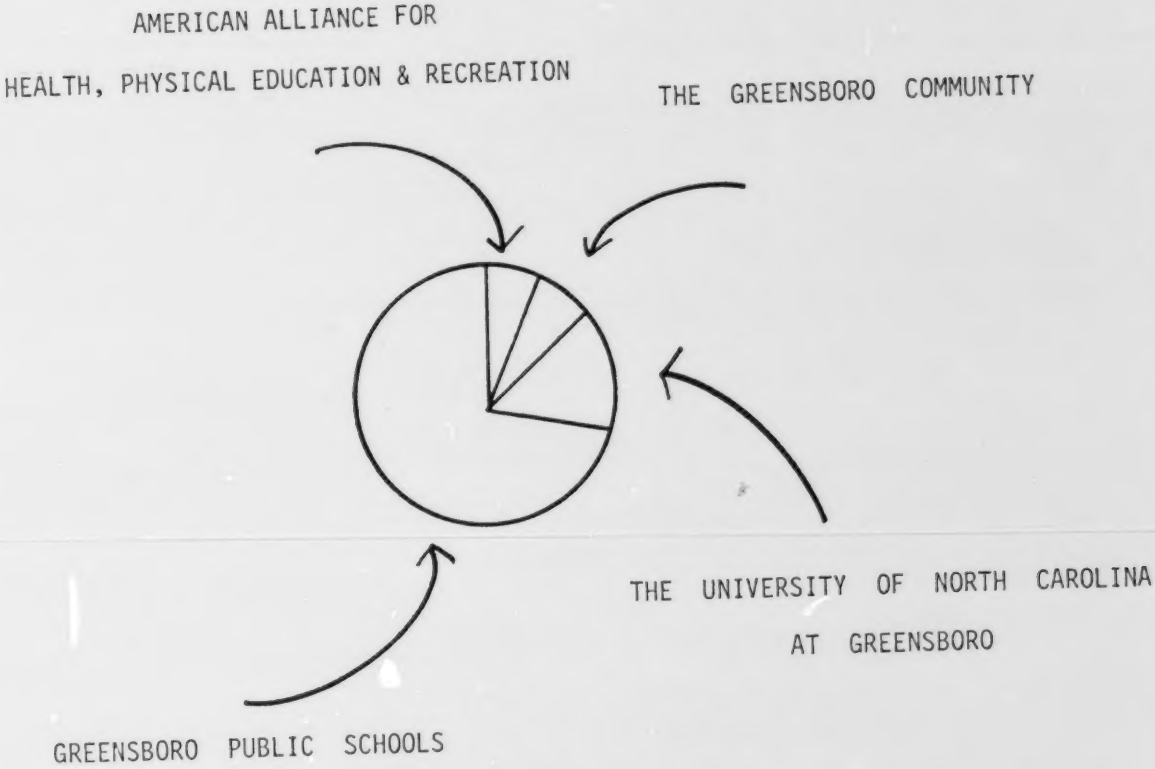

Figure 7

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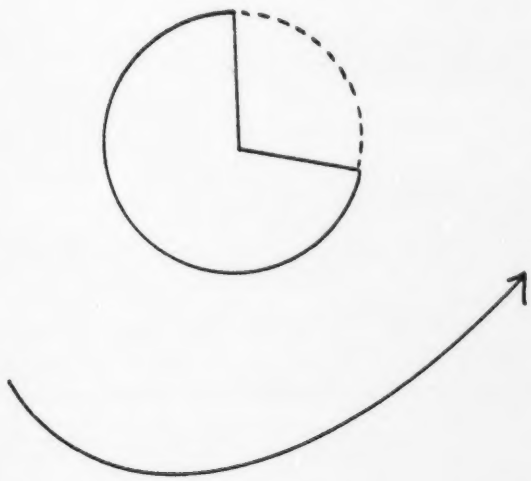
INPUTS: GREENSBORO PUBLIC SCHOOLS



ADMINISTRATIVE OFFICES

Superintendent
Business/Purchasing
Director, Physical Education
Director, Secondary Education
Director, Staff Development

FEEDER ELEMENTARY & JUNIOR HIGH SCHOOLS

BEN L. SMITH HIGH SCHOOL

Principal
Assistant Principal

Students

Teachers
Physical Education
Other School Subjects

Parents

Maintenance Personnel

Physical Plant / Equipment / Facilities

Figure 8

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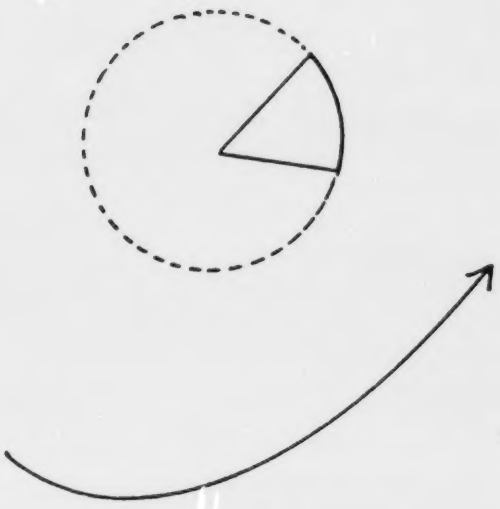
INPUTS: THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO



SCHOOL OF HEALTH, PHYSICAL EDUCATION AND RECREATION

- Dean
- Faculty
- Students
  - Undergraduate preprofessional
  - Graduate

PHYSICAL PLANT/FACILITIES/EQUIPMENT

- Library
- Computing Center
- School HPER materials/equipment

OTHER ACADEMIC UNITS

- Consultative services

Figure 9

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INPUTS: A.A.H.P.E.R. AND THE COMMUNITY

A. A. H. P. E. R. (N. A. S. P. E.)

SECONDARY SCHOOL PHYSICAL EDUCATION COUNCIL

Materials
Personnel (consultation)
Publicity
Seed money

THE COMMUNITY

Agency and other facilities
Businesses
Guilford County Board of Supervisors
Smith Richardson Foundation
Tax payers

Figure 10

THE INNOVATIVE PROCESS:
FROM STATUS QUO TO SPECULATION

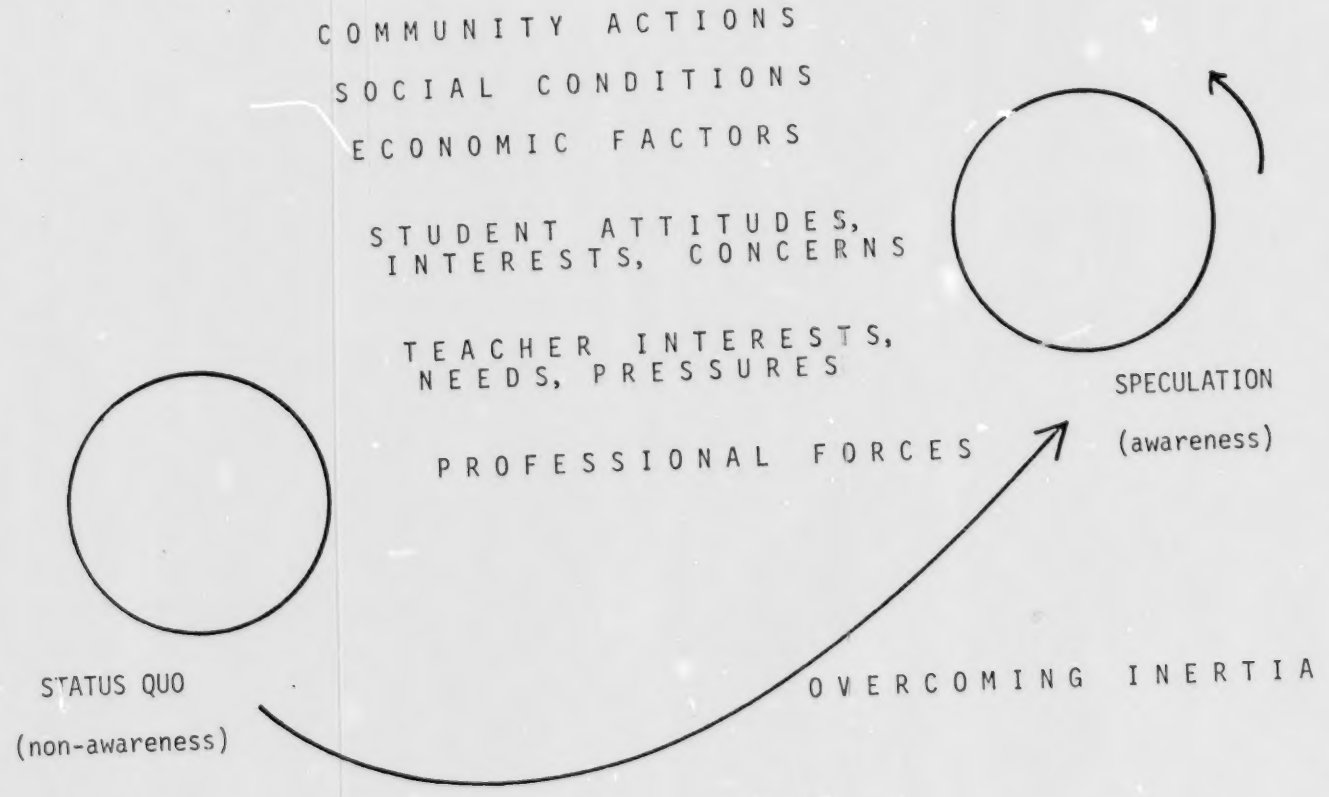

Figure 11

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THE INNOVATIVE PROCESS:
FROM SPECULATION TO GOAL IDENTIFICATION

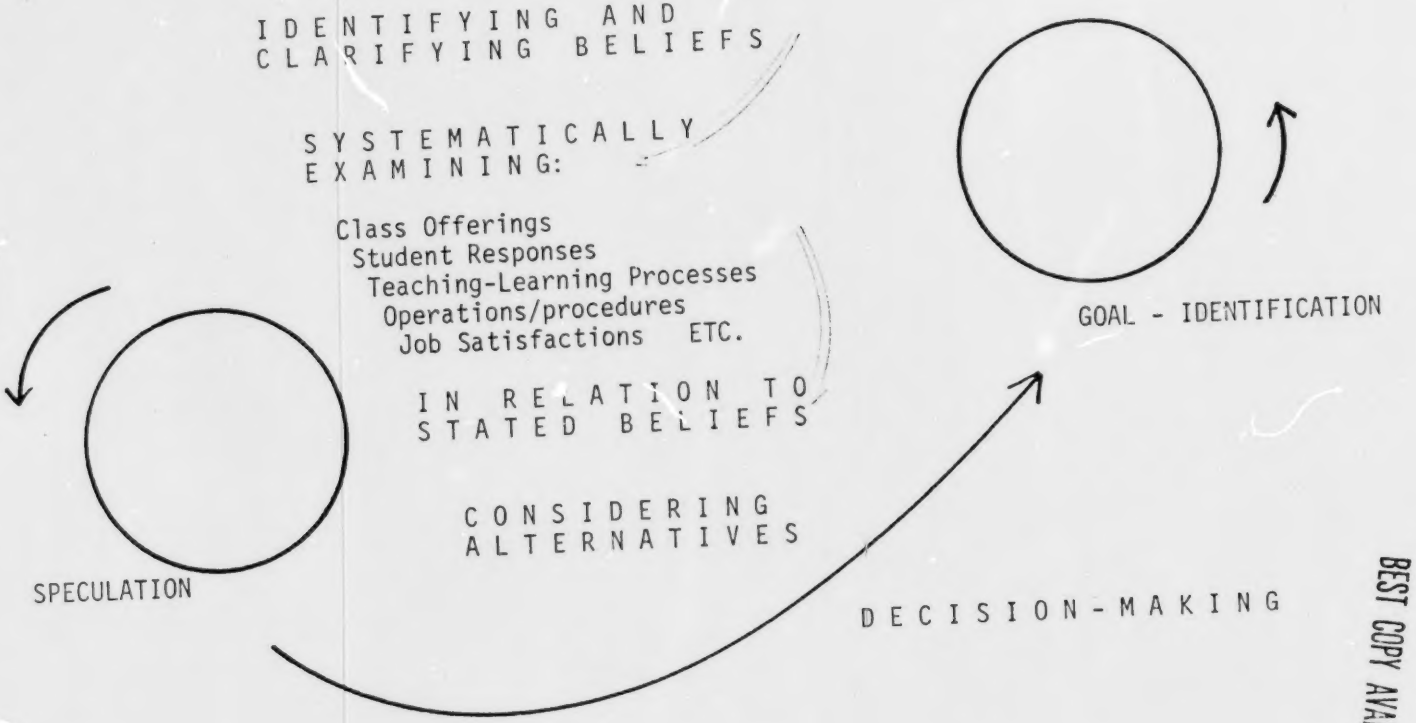

Figure 12

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THE INNOVATIVE PROCESS
FROM GOAL IDENTIFICATION TO COMMITMENT

Figure 13

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THE INNOVATIVE PROCESS:
FROM COMMITMENT TO EXPLORATION

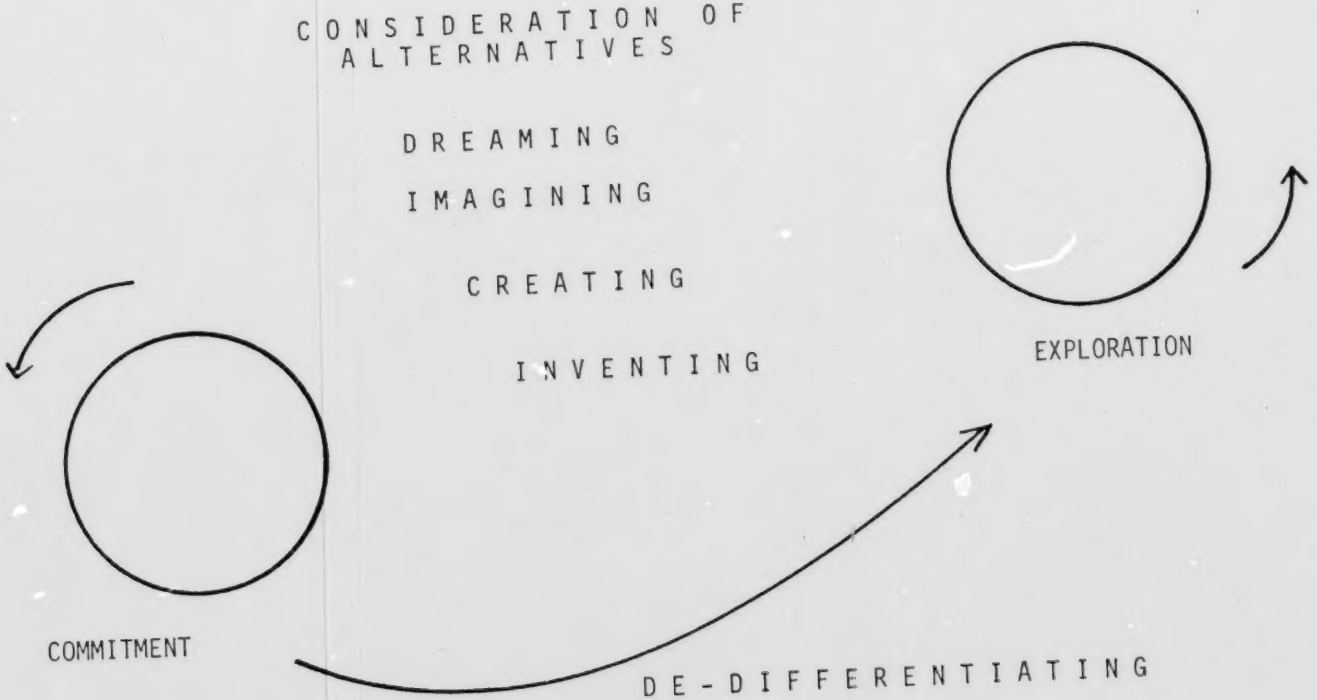

Figure 14

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THE INNOVATIVE PROCESS:
FROM EXPLORATION TO EVALUATION

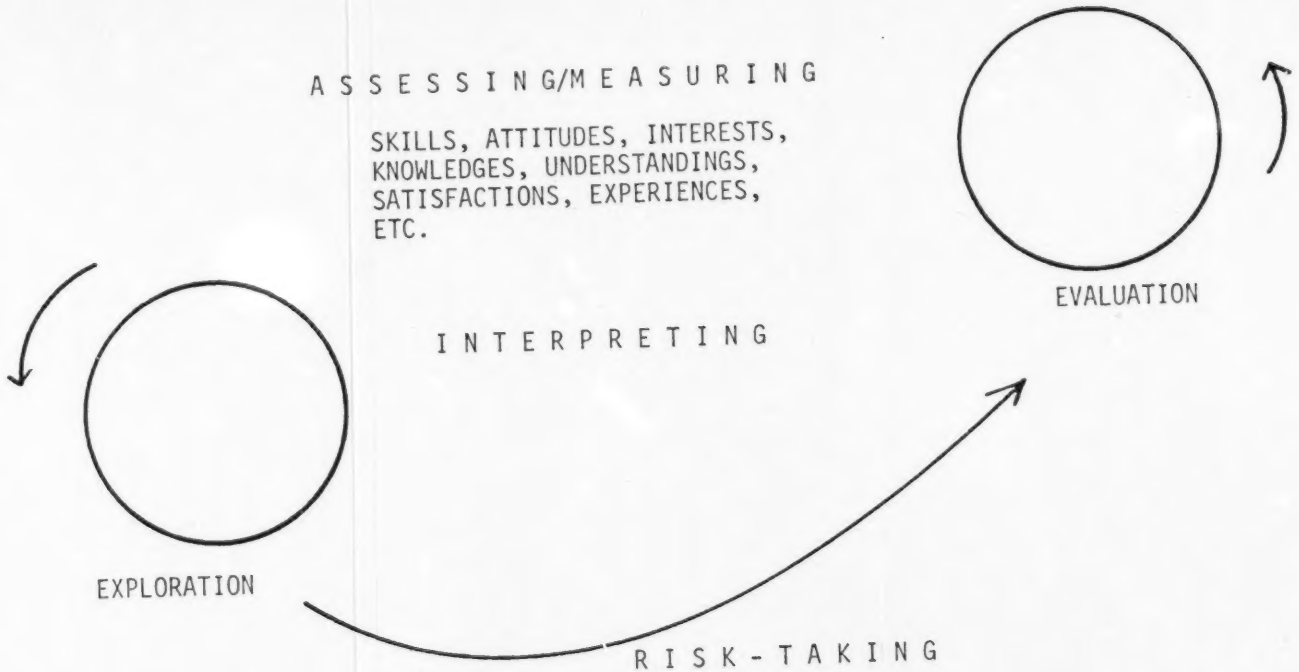

Figure 15

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THE INNOVATIVE PROCESS:
FROM EVALUATION TO VERIFICATION

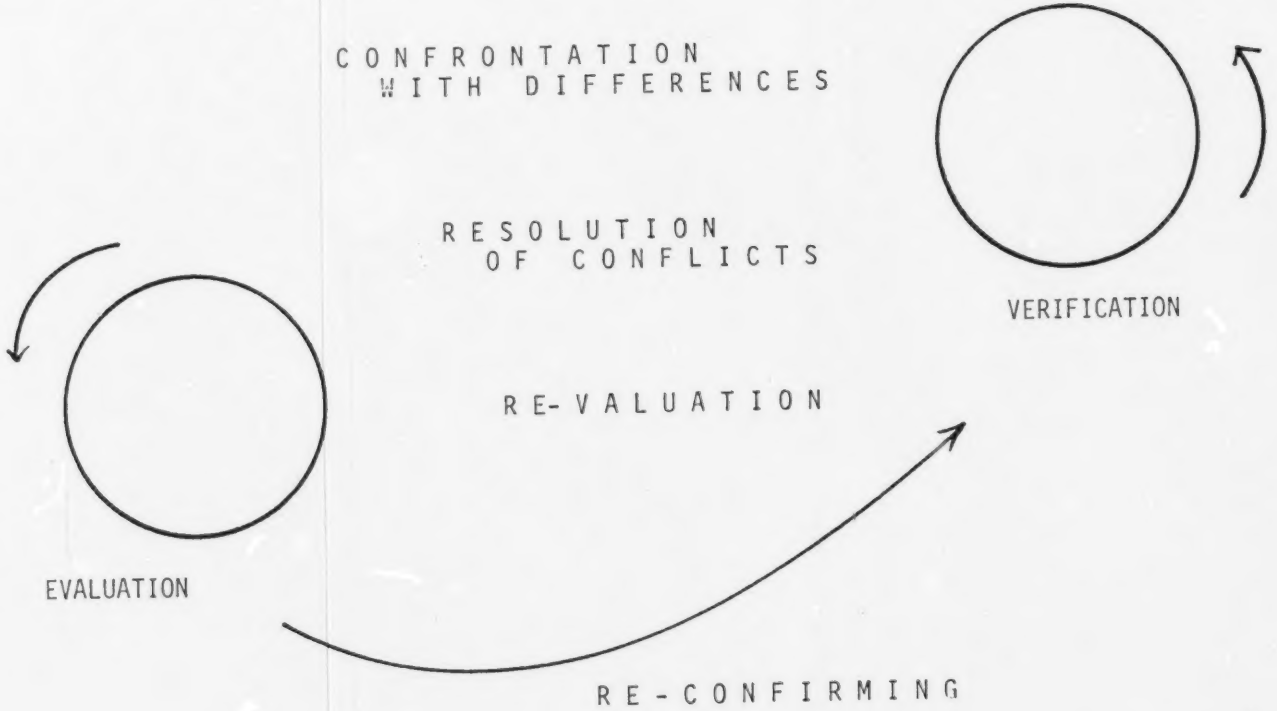

Figure 16

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THE INNOVATIVE PROCESS:
FROM VERIFICATION TO ADOPTION

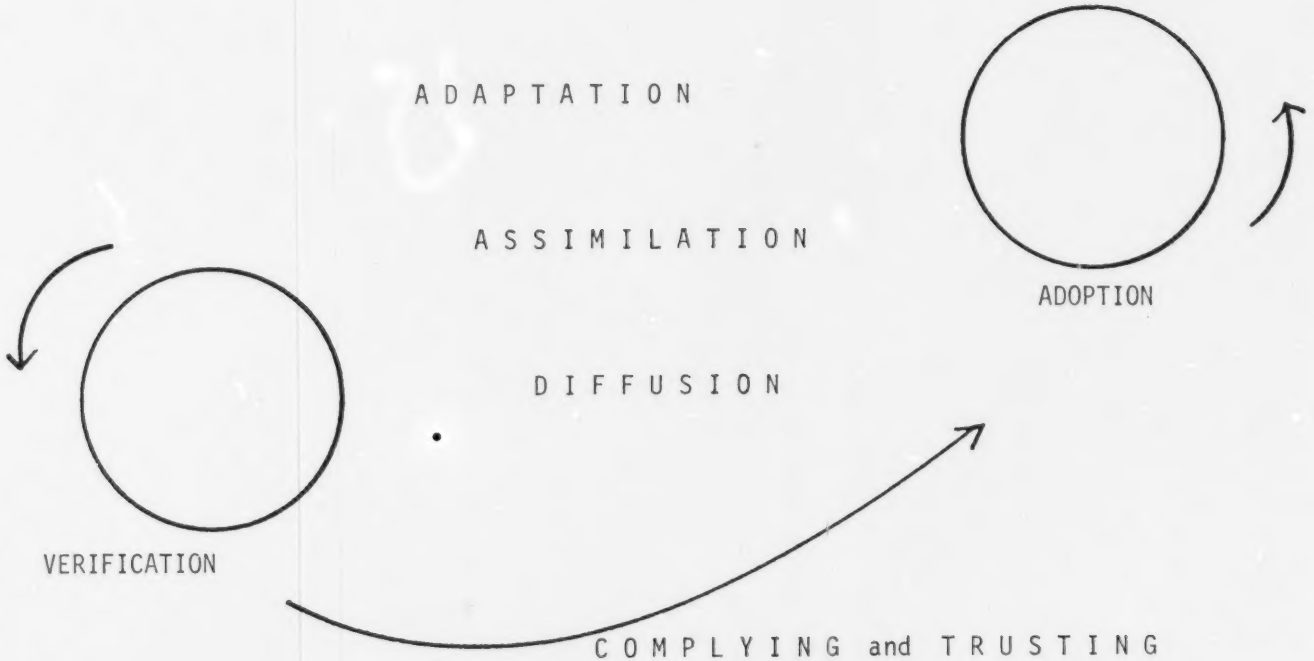

Figure 17

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THE INNOVATIVE PROCESS:
FROM ADOPTION TO STATUS QUO

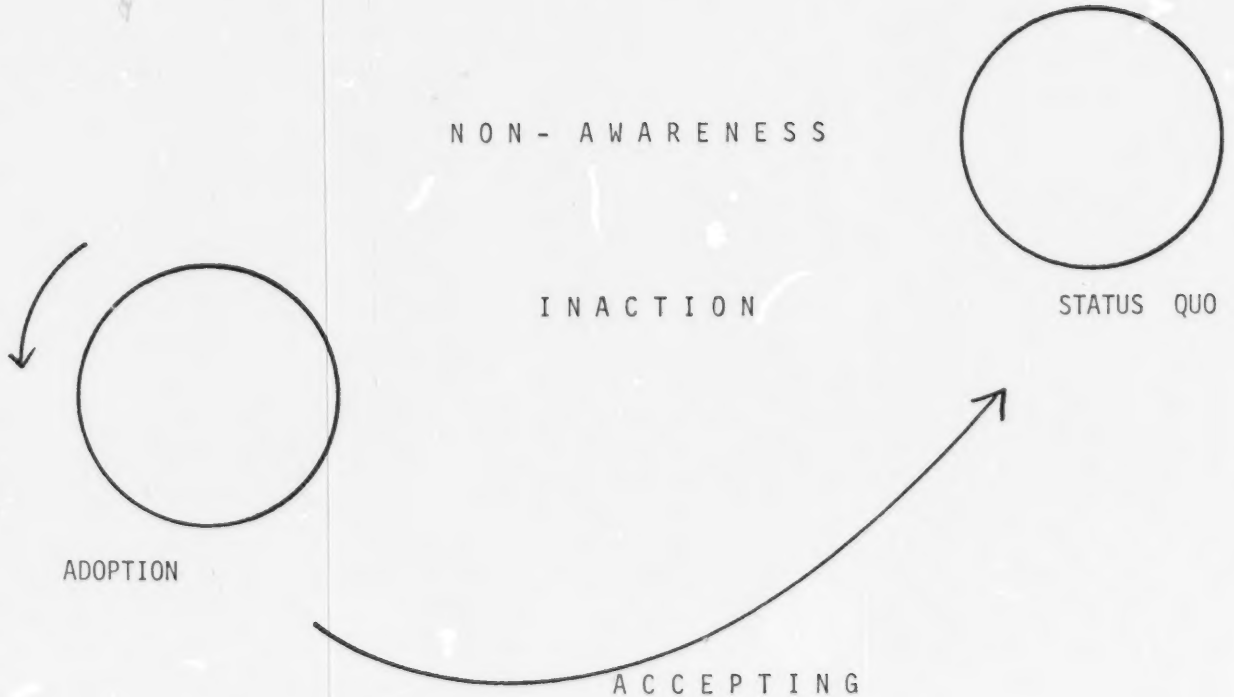

Figure 18

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Findings/Evidence of Innovation

Having come full circle, from status quo to status quo, the question arises as to what changes have, in reality, occurred. Does a feasibility study report findings? The following figure provides information which calls attention to the changed conditions in the status quo.

Facilities are not discussed in the figure. For your information, the CISSPE physical plant includes one gymnasium, one room (used for wrestling and self-defense), several auxiliary spaces and three fields. The major change in facilities is the addition, since 1972, of eight tennis courts. Still additional changes are beyond the drawing board stage, namely, another gymnasium complex and a swimming pool. Center staff members were all involved in the planning of these facilities. One cannot claim that the facilities increase is a direct result of Center activities. However, the old adage that "nothing succeeds like success" cannot be completely ignored.

The elaboration of actual activities might also provide some insights as to the extent of the change in status quo. In 1972, the four so-called "courses" in the Smith physical education program were: (a) PE for adaptives, (b) PE 2, (c) PE 3 and (d) PE 4. The following activities are currently available for students:

Applied PE
Archery/Volleyball
Basketball
Basketball/Self Defense
Basketball/Volleyball
Canoeing/Sailing
Cheerleading
Field Hockey/Folk Dance
Folk Dance/Square Dance
Football/Weight Training
Golf/Archery
Golf/Basketball
Gymnastics
Independent Study
Introduction to Dance, Drama and Choreography
Modern Dance
Recreational Sports
Self Defense
Soccer/Wrestling
Speedball/Volleyball
Tennis/Badminton
Tennis/Weight Training
Tennis
Track and Field/ Weight Training
Volleyball/Softball
Volleyball/ Track and Field

Courses are offered on two-levels, e.g., beginning and intermediate. Various

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EVIDENCE OF INNOVATION

CENTER FOR INNOVATION IN SECONDARY SCHOOL PHYSICAL EDUCATION

Ben L. Smith High School, Greensboro, N.C.

1972	Condition	1974
	Student Involvement	
1893	Total N - Smith H.S.	1543
774	Student Participation in Physical Education	1202
40.8%	Percent	78.4%
603	Required	864
171	Elective	338
107 - 64	Boys - Girls	169 - 169
	Instructional Features	
4	Courses Offered	25
No	Student Choice(s)	Yes
No	Levels of Instruction	Yes
6 GPS	Staff	6 GPS + 3 UNC-G
No	Staff Teaching Preference	Yes
No	Student Course Evaluation	Yes
No	Course Catalogue	Yes
	Professional Staff Activities	
Information-giving	Regular Staff Meeting	Problem solving and decision-making
	Consultation	
No	Within CISSPE	Yes
No	Upon Request	Yes

Figure 19

offerings may be taken by all-girls, all-boys or co-educationally. Anticipated upon completion of the pool are twelve aquatic activities--five levels of swimming, basic rescue and water safety, life saving, Water Safety Instructor, diving, water polo, competitive swimming, competitive diving, synchronized swimming and skin and scuba diving. The added new gymnasium will also affect activity offerings within the program.

A most important change in the status quo, one which does not lend to drawing on a flow chart or listing, is the development of a working philosophy. As an outgrowth of examining program objectives and grappling with the problems of priorities, a "blueprint" for action has been formulated. The document, which took two years to prepare, specifies very succinctly what we, as a Center staff, believe. Each belief is then elaborated in the form of a commitment. Program implications emanating from the commitments are identified. Finally, necessary actions for each belief-commitment-implication are indicated. At the present time, the Center is enacting its first-priority belief.

CISSPE beliefs include:

> We believe in the teacher as facilitator and students as consumers,
> We believe in physical activity,
> We believe in the continuous development and growth of the program and those who give it leadership,
> We believe in the integrity of the individual,
> We believe in enjoyment,
> We believe in the secondary school as an integral part of the community.

Worksheets explaining the parallel commitments, program implications and actions will be available for inspection at the Drop In Center this afternoon.

Time does not permit description of other innovations, e.g., concern with teaching behavior and its study, use of technology in guiding skill acquisition (the videotape, in particular), contracting, and the like. From the above remarks, you will surely discern that the status quo has changed.

Synthesis/Summary

Thus far, the obvious elements of the paradigm have been identified—structural components and operational characteristics that describe the innovative process associated with Ben L. Smith High School's physical education program. There are still additional constituents. Although unseen, these are important in the overall model because they contribute a synthesizing effect to the process. They establish relationships. For want of a better name, I call them spin-offs. Spin-offs might be described as "vicious cycles" because they are, at one and the same time, inputs into the process and outcomes. For example, consider TIME as an unseen property of the paradigm. The hours and hours spent in staff meetings—first learning to be sensitive, open, trusting and sharing and now devoted to communicating and exchanging ideas preparatory to decision-making—are not represented in the scheme. As a result of the time spent over the three years, we, at the Center, believe "we have something going for us!" Another illustration of a spin-off is PAPER-WORK. Reams and reams of paper have been important variables in the model-building process. This includes: student interest questionnaires, course evaluation forms of various types, worksheets, staff meeting agenda, reports ranging from small subcommittee exercises to Tracy Hetrick's fine investigation of staff development as a factor in the Center's evolution. All of these papers have provided tangible and intangible inputs in the model. Student reactions, outreach—particularly to UNC-G pre-professional and graduate students, the effects of cooperation are not incorporated in the previous illustrations.

And then there is the "dark side" of the orbit, the ever recurring day to day frustrations and conflicts which cause discouragement. Circular behavior and its redundancies make the going particularly difficult at times. Yet, overcoming these deterrents causes or creates added thrust to the whole

dynamic process.

In summary, what has been described can simply be referred to as a series of experiences which have caused changes to occur at one senior high school in Greensboro, North Carolina. The process makes no claim of being exceptional though it is unique to the specific situation. The point to be reiterated again is that staff relations are the critical elements in innovation. Complete commitment provides a driving and sustaining force that endures over the long and arduous time span necessary for bringing about change. Such commitment necessitates submerging personal preferences and is unusually energy-demanding and time-consuming.

Implications

Stogdill (1970) points out that the formulation of behavior models is not an end for the researcher. He challenges the model builder to extend the range of application of his/her creation. Such a charge is consistent, it seems to me, with the notion of a feasibility study. The intent of the CISSPE project was, after all, to explore the possibilities of establishing pilot centers for innovation. In concluding, it is appropriate to consider the generalizability of the seven-stage paradigm developed at Ben L. Smith High School. In answering the question, "Is the model applicable elsewhere,? I am only able to offer conjecture.

My answer to that question is a HIGHLY QUALIFIED YES. Yes, innovation in secondary school physical education is within the realm of the possible <u>if</u> the public schools and colleges/universities pair personnel in such a way as to create a responsible and interactive force that initiates and sustains the process at every step along the way. Note, at no time in this discussion did I refer to "the architect of change." There is no such person or component in the paradigm. Nor did I speak of "the school environment," "the university environment," "the community environment." There is but <u>one</u> innovative environ-

ment; it is all of these. Lack of reference to "high school teacher," "school supervisor," "faculty or university supervisor" throughout this report was intentional. There is only one staff at the Center. We regard one another as equals and respect the potential contributions each individual is able to make to the group effort. In other words, in my judgment, none of the structural components of the paradigm—including the high school, per se, or the teacher education institution attempting to cooperate—is capable of carrying out the process of change alone. Enjoining the two institutions in a partnership yields a strength which I find convenient to explain in old-fashioned gestalt terminology: the whole is far greater than the sum of its parts. The developed partnership is symbiotic not parasitic. Through open and sensitive interactions of individuals, purposiveness is served.

The question about whether or not the model is applicable elsewhere may be answered another way. I doubt, in all honesty, that the paradigm is generalizable. The IF clause is much too tenuous. Furthermore, the idiosyncratic nature of the situation in which the model was formulated defies replication. I am unable to predict the results of combining other unique phenomena—people, events, places, times. I know of few directors of staff development of public school systems who could, as brilliantly as Doris Hutchinson, bring a group of teachers to think that they wanted to participate in human relations training. Nor are there many high school principals like William McIver who would permit all of the members of the physical education department to be absent from school on successive days in order to engage in such training. The teachers were replaced by substitutes and UNC-G preservice students. Furthermore, the very location of a renowned leadership training institution like the Smith Richardson Foundation in the Greensboro environs is a factor to be reckoned in the entire plan. While I know that Iris Hunsinger, Ben L. Smith High School's most

cooperative assistant principal gives total support to the Center idea and its activities by assisting with difficult scheduling problems, spending time with Center visitors, and even acting as a public relations agent by bringing Board of Education members to our meetings, I hesitate to estimate the support one might expect from her counterpart in another situation.

There is one last point to be made relative to the innovative process. Above and beyond all of the inputs, conditions, relationships, descriptive characteristics and the like is the most fundamental consideration of all—purpose. Why innovate? What reasons are there for changing the physical education program at any given secondary school? To improve the quality of the program? Why? What difference does it make? To recognize student needs, interests and preferences? For what reason? To reward teaching effectiveness? How?

It was more than forty years ago when education was beginning to study itself that Morrison (1934) varied the old cart-before-the-horse metaphor. He suggested that contemplating educational theory was like " . . . setting forth on a voyage equipped with instruments of navigation, but with neither a destination nor a chart (p. iv)." At best, any behavioral model merely provides a kind of chart for some experience. At worst, one find out—somewhere along the way—that the route chosen was the wrong one. In no way does a behavioral model provide a destination.

It is not for me to conjecture goals for other programs of physical education. To do so is contra-indicated by the specific change strategy I have just described. It should be obvious that it is an approach to which I am deeply committed. What I am able to do, in closing, is call attention to a reality that you might bear in mind should you conceptualize some new goals for your programs. In the event that you decide to take steps to cause change(s) to occur, do remember Hazo's (1964) verse entitled "There Is No Straight Line."

Everything is in circles:
the spun top
of the world,
the night, the day,
the night again—
the corn
from seed
to stalk
to corn
to seed.

We go
where we were,
and roads
are the same
to our coming
and going.

There is spring
in snow,
and summer
in April,
and autumn
in the first zinnia,
and January
in the last.

Look deep enough,
walk far enough,
live long enough,
and you will learn
how all things
turn
and merry-go-round
around the sun,
and
make
a
zero.

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APPENDIX A: CISSPE PERSONNEL

Greensboro Public Schools

Central Administration: 712 N. Eugene St. Greensboro, N.C. 27408

W. J. House, Superintendent
Joseph R. Brooks, Director, Secondary Education
Lem Cox, Director, Physical Education
Doris Hutchinson, Director, Staff Development

Ben L. Smith High School: 2407 So. Holden Road Greensboro, N.C. 27407

William McIver, Principal
Iris Hunsinger, Assistant Principal

Physical Education Staff:
M. Angelyn Glisson
Lois I. Harris
Helburn Meadows
Robberta Mesenbrink
J. R. Richardson
W. R. Thompson

The University of North Carolina at Greensboro

School of Health, Physical Education and Recreation: Coleman Gymnasium, UNC-G, Greensboro, N.C. 27412

Margaret A. Mordy, Dean

Pearl Berlin
Lynne P. Gaskin
Tracy L. Hetrick

During the 1973-74 academic year, Ned Jones was a member of the CISSPE staff by virtue of his assignment to Ben L. Smith High School's physical education department. Ethel Martus Lawther and A. Heath Whittle were involved in the Center during its early development. June P. Galloway contributed richly to the idea and initiation of the Center prior to her death.